

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Petitions For Waiver To Deploy	)	PS Docket No. 06-229
700 MHz Public Safety Broadband	)	
Networks	)	
	)	

**COMMENTS BY THE CITY OF SEATTLE ON  
PETITIONS FOR WAIVER TO DEPLOY 700 MHz PUBLIC SAFETY  
BROADBAND NETWORKS**

The City of Seattle (Seattle), which has previously received a conditional waiver<sup>1</sup> from the Commission to use 700 MHz broadband public safety spectrum to construct a public safety wireless broadband network, hereby submits the following comments in response to the Commission's September 15, 2010, Public Notice DA 10-1748 and its September 22, 2010, Public Notice DA 10-1796. In these notices the Public Safety and Homeland Security Bureau requests comments on petitions for waiver filed by twenty-four (24) additional public safety entities seeking authority to deploy public safety wireless broadband networks on a local or regional basis in the 700 MHz public safety spectrum.

In particular, the Commission sought comment on four issues: (1) eligibility under Section 337; (2) addressing overlapping requests; (3) issues related to the timing of Bureau action and the volume of waivers received in relation to the Commission's overall interoperability goals; and (4) any impact such additional waivers may have on the budget of the Public Safety Spectrum Trust (PSST).

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<sup>1</sup> Requests for Waiver of Various Petitioners to Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks, PS Docket No. 06-229, *Order*, FCC 10-79 (released May 12, 2010) (*Waiver Order*).

**I. THE COMMISSION SHOULD ALLOW WAIVER RECIPIENTS TO ENTER PARTNERING AGREEMENTS UNDER SECTION 337 WITH UTILITY AND OTHER CRITICAL INFRASTRUCTURE ENTITIES TO HELP BUILD AND MAINTAIN THEIR NETWORKS.**

The City of Seattle concurs with the comments filed by the State of New Mexico which argue that “the Commission has broad latitude to interpret Section 337”.

The City of Seattle must “live” interoperable communications every day in the response of its departments to daily emergency incidents and larger disasters. In these responses, the City’s Police and Fire (including Emergency Medical) Departments are first responders, but are often supported and assisted by second responders (critical infrastructure providers) including the City’s municipal electric utility (Seattle City Light or SCL), its water and wastewater utility (Seattle Public Utilities or SPU) and its transportation department (Seattle Department of Transportation or SDOT).

Seattle Public Utilities uses this network as a primary means for voice radio networking. Seattle City Light and Seattle Department of Transportation use this network as a means to communicate with and jointly operate with the Seattle Police and Fire Departments.

The City of Seattle, working with partner agencies within King County, has established an 800 MHz trunked public safety radio network used by almost every police and fire agency in the County. This network interoperates with nearby 800 MHz trunked public safety networks at the Port of Seattle, City of Tacoma, and in Snohomish County. It also interoperates with the Federal Integrated Wireless Network (IWN). But this same network is used by critical infrastructure providers such as Seattle Public Utilities and Sound Transit, a regional transit agency plus King County Road Services and many other public works and water and wastewater utilities throughout the County.

These departments must often work together to respond to emergent and critical incidents. For

examples:

- Every day traffic collisions occur on major streets and freeways in the City. Seattle Fire responds to extinguish fires and render emergency medical aid. Seattle Police responds to protect the scene and investigate. Seattle Transportation responds to re-route traffic, thereby preserving traffic flow and protecting the safety of those at the collision scene.
- Occasionally, major fires break out, including, for example, the September 21, 2010, fire at the Sunny Jim building<sup>2</sup> in Seattle. Responding agencies included 120 firefighters from Seattle Fire, Seattle Police, the Arson and Bomb Squads, and the Bureau of Alcohol, Tobacco and Firearms (ATF). The building is located adjacent to Interstate 5, the major north-south freeway in Seattle. Dense smoke drifted across the Interstate and adjacent streets, requiring responses from Washington State Department of Transportation and City of Seattle transportation departments. Seattle Public Utilities was involved to insure adequate water pressure was available for firefighting.
- The Seattle region and the Pacific Northwest regular experience windstorms and occasional ice storms which cause significant power outages and even loss of life. The Hanukkah Eve windstorm of 2006 caused damage to an estimated 75% of the circuits of Puget Sound Energy's electrical grid, and caused the deaths of 18 people, many from carbon monoxide poisoning (cooking or heating inside their homes) in the days following the event<sup>3</sup>. Similar events include the Great Coastal Gale of 2007<sup>4</sup> and the ice storm which paralyzed the Seattle area in December 2008<sup>5</sup>. In all these events, interoperability between electric and water utilities and public safety agencies such as police, fire and emergency medical are of paramount importance to maintaining the safety of lives and property. Furthermore, in many of these cases which involve regional power outages, electric utilities from far outside the affected region will send their crews and trucks into the region to support restoration of power. This widespread mutual aid by power companies is similar to the mutual aid used by fire departments and police departments to respond to major incidents. This mutual support demands interoperable communications not just within the electrical industry, but with police and fire departments in order to protect the public safety.
- The Nisqually Earthquake<sup>6</sup> occurred on February 28, 2001. This magnitude 6.8 earthquake shook the entire region and caused over a billion dollars in property damage, including considerable damage to parts of Seattle. Immediately after the quake, the departments of the City government of Seattle responded and worked together to protect the public safety and mitigate the effects. Besides Seattle Police and Fire, SDOT responded to inspect bridges and other critical infrastructure. Certain traffic arteries and

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<sup>2</sup> [http://www.seattlepi.com/local/427115\\_fire22.html](http://www.seattlepi.com/local/427115_fire22.html)

<sup>3</sup> [http://en.wikipedia.org/wiki/Hanukkah\\_Eve\\_Wind\\_Storm\\_of\\_2006](http://en.wikipedia.org/wiki/Hanukkah_Eve_Wind_Storm_of_2006)

<sup>4</sup> [http://en.wikipedia.org/wiki/December\\_2007\\_Pacific\\_Northwest\\_storms](http://en.wikipedia.org/wiki/December_2007_Pacific_Northwest_storms)

<sup>5</sup> [http://seattletimes.nwsources.com/html/localnews/2008543255\\_webweather20m.html](http://seattletimes.nwsources.com/html/localnews/2008543255_webweather20m.html)

<sup>6</sup> [http://en.wikipedia.org/wiki/Nisqually\\_earthquake](http://en.wikipedia.org/wiki/Nisqually_earthquake)

bridges were shut down by Seattle Police pending the outcome of such inspections. Seattle City Light responded to a number of electrical outages. Even the Seattle Department of Planning and Development (DPD) responded over several days to inspect public and private buildings, “tagging” them as red, yellow or green to prevent residents from entering buildings deemed unsafe and subject to collapse.

- In the historic past, the Seattle region has experienced larger earthquakes than Nisqually, and Seattle/regional agencies actively work to prepare for a potential future earthquake of magnitude 8.0 or larger<sup>7</sup>. Such an earthquake would result in considerable loss of life and property damage, including the destruction of the Alaskan Way viaduct, a traffic artery carrying 100,000 vehicles a day<sup>8</sup>.

There are, in addition to this list from the Seattle Urban Area, many other examples nationally where critical infrastructure providers are vital to the public safety, e.g. hurricanes in the Southeastern United States, where transportation departments are vital to orderly evacuations in advance of the storms, and electric/water utilities are vital to recoveries, public safety and public health in their aftermaths.

In addition to their use in incident and disaster response, wireless networks are a vehicle for development of Advanced Metering Infrastructure (AMI) and Smart Grid, both for electric and water utilities. The Commission’s own National Broadband Plan recognizes this synergy between utility use and broadband<sup>9</sup>. The NBP further recognizes the need for utilities to use the 700 MHz band for wireless communications<sup>10</sup>. AMI and Smart Grid have a public safety purpose, in that these technologies allow electric utilities (and potentially water and gas utilities) to rapidly find the exact location of outages or problems, resulting in an improved time-to-repair, minimizing the potential loss of life and economic or property loss due to outages.

The record in Public Safety Docket 06-229 clearly demonstrates the need for hardened networks

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<sup>7</sup> <http://earthquake.usgs.gov/regional/pacnw/activefaults/sfz/>

<sup>8</sup> [http://www.youtube.com/watch?v=hos\\_uIKwC-c](http://www.youtube.com/watch?v=hos_uIKwC-c)

<sup>9</sup> For examples, page 247 of the National Broadband Plan discusses integrating broadband into the smart grid, as does Chapter 12.1, p. 249ff.

<sup>10</sup> National Broadband Plan, recommendation 12.4, page 252.

built to public safety specifications, i.e. backup power supplies, redundant connections, hardened sites and towers. Seattle concurs with the comments of New Mexico that “CII entities have similar communications service needs as those required by public safety entities. Both require a hardened public safety grade network providing reliable ubiquitous coverage that will not fail during weather emergencies and natural or man-made disasters<sup>11</sup>.” This “hardening” applies to the needs of critical infrastructure providers, who must have interoperable communications to protect the public safety and restore their services during disasters when electrical power is absent and commercial networks are overloaded or inoperative. This shared need between first responders and second responders for hardened interoperable communications underscores the need for the Commission to broadly interpret Section 337.

Finally, the Commission has recognized the difficulties in funding and building a nationwide public safety wireless broadband network both in its *Waiver Order* granting the initial set of conditional licenses<sup>12</sup>, and in the NBP. The National Broadband Plan has estimated the cost of the nationwide network at \$12 billion to \$16 billion and recommended Congress create a grant program to provide some of that funding<sup>13</sup>. Given a difficult Federal budget and large Federal government deficits, such a grant program may be difficult to fund. Certainly no grant program could fund the full cost of the network construction. Seattle concurs with the comments by the State of New Mexico that the “Commission should establish a working regulatory regime for early builders that provides waiver recipients flexibility in pursuing viable funding sources, including the option to partner with utilities and other CII entities as a source for funding”<sup>14</sup>.

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<sup>11</sup> Comments of the State of New Mexico on Public Notice DA 10-1748, page 8.

<sup>12</sup> Waiver Order at paragraph 10.

<sup>13</sup> National Broadband Plan pp. 317-319.

<sup>14</sup> Comments of the State of New Mexico on Public Notice DA 10-1748, page 7.

In summary, Seattle agrees with the comments of the State of New Mexico that Section 337(f)(1) of the United States Code and the Commission's past orders support allowing waiver recipients to enter into agreements for shared use with utilities and other critical infrastructure providers<sup>15</sup>.

## **II. THE COMMISSION SHOULD REQUIRE WAIVER RECIPIENTS TO COORDINATE THEIR BUILD-OUTS WITH THEIR STATES AND OTHER REGIONAL PARTNERS**

The Commission notes that several of the new waiver submissions either overlap geographically with each other, or with previously granted waivers. In the *Waiver Order*, the Commission expressed a clear preference for waiver requests at the state level, and included provisions requiring smaller jurisdictions that were granted relief to seek approval of the state before pursuing deployment<sup>16</sup>.

The City of Seattle believes the Commission should require any new waiver recipient to clearly demonstrate coordination with its State or Region.

When the Commission received the first twenty-one waiver requests, there were few known facts about the nationwide network. The Commission had allocated 700 MHz spectrum for public safety use. Several commercial telecommunications carriers had adopted Long Term Evolution (LTE) as a standard for their fourth generation wireless networks, and two had begun construction of these networks. NPSTC, the PSST and APCO had announced support for LTE as technology for use in the public safety nationwide wireless broadband interoperable network, and NPSTC had commissioned a Broadband Task Force (BBTF) which rendered a report outlining how a potential nationwide public LTE network might operate technically and be

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<sup>15</sup> Comments of the State of New Mexico on Public Notice DA 10-1748, page 10.

<sup>16</sup> Waiver order, paragraphs 49-54.

governed<sup>17</sup>. And individual jurisdictions such as the City of Seattle have a specific need for fourth generation wireless networking, and some financial ability to proceed.

But many aspects of the proposed new network(s) were also unknown. Was LTE really going to be the standard, or would WIMAX or another technology be used? If the Commission granted waivers, would it also require build-out of the network to the geographic boundary of the wavier-requesting region, thereby entailing significant financial investment? How would the actual construction of this nationwide network proceed? And how would the construction be funded? Developments this year, and specifically the Commission's own *Waiver Order* of May 12, 2010, clarified some of these aspects. While it is unclear how the nationwide network will ultimately be completely finished, it is clear that a number of cities, regions and states will be able to construct LTE networks with their own funds or a combination of their own funds and Broadband Technology Opportunity Program (BTOP) grants. Others are actively pursuing funding or a leveraged model for construction. The network will start with a series of up to 20 early builders across the nation.

Therefore, given all the uncertainties, it was entirely appropriate at that time for the Commission to grant waivers to individual cities or regions with minimal evidence of coordination.

Historically, each city, county or region has relied upon its neighboring jurisdictions and its State for support in time of crisis. In Seattle, during the World Trade Organization (WTO) protests of November, 1999<sup>18</sup>, Seattle relied upon law enforcement personnel from throughout the Puget Sound Region, and the State of Washington, plus the Washington National Guard, to maintain the public safety. There are many other examples of such mutual support, including joint law

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<sup>17</sup> NPSTC Broadband Task Force Report at [http://www.npstc.org/documents/700\\_MHz\\_BBTF\\_Final\\_Report\\_0090904\\_v1\\_1.pdf](http://www.npstc.org/documents/700_MHz_BBTF_Final_Report_0090904_v1_1.pdf)

<sup>18</sup> [http://en.wikipedia.org/wiki/WTO\\_Ministerial\\_Conference\\_of\\_1999\\_protest\\_activity](http://en.wikipedia.org/wiki/WTO_Ministerial_Conference_of_1999_protest_activity)

enforcement actions to investigate crimes and mutual aid support by area fire departments.

In addition, most states have commissioned State Interoperability Executive Committees (SIECs)<sup>19</sup>, appointed Statewide Interoperability Coordinators (SWICs) and written Statewide Communications Interoperability Plans (SCIPs)<sup>20</sup>. These groups have largely acknowledged the need to build a nationwide interoperable wireless public safety broadband network in the 700 MHz band, even if they have not yet laid concrete plans for such construction (that is, the SCIPs may not include such 700 MHz plans).

Given these facts, the Commission should require clear evidence of coordination of effort in granting future waiver requests. The new waiver request from four counties in the Puget Sound Region of Washington State, with the State of Washington concurring, is an example of such clear evidence. The waiver request from the State of Texas<sup>21</sup>, with supporting documentation from Harris County, the City of Houston, the Greater Harris County 9-1-1 Emergency Network, and the City of San Antonio, is another such example.

At the same time, the Commission should acknowledge clear past evidence of such coordination. In the Puget Sound Region, four entities in King County have formally bound themselves together to build and operate an 800 MHz trunked radio network<sup>22</sup>. Such clear evidence of cooperation and interoperability in urban areas, when it exists, somewhat reduces the need for a high degree of formal coordination with the State government.

Finally, however, the Commission could acknowledge and recognize that the need for

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<sup>19</sup> See, for example, the proceedings of the Washington State SIEC at <http://siec.wa.gov/>.

<sup>20</sup> See, for example, the Washington State SCIP at <http://www.siec.wa.gov/plan/files/SCIP.pdf>

<sup>21</sup> Waiver request submitted by the Texas Department of Public Safety dated September 15, 2010, and acknowledged by the Commission in its public notice DA10-1796 dated September 22, 2010.

<sup>22</sup> The four jurisdictions are the City of Seattle, King County, Valley Communications and the Eastside Public Safety Communications Agency. The network is created and governed by an interlocal agreement and a formal Regional Communications Board.



communications interoperability in support of public safety often crosses State boundaries. Vancouver, Washington, is much closer to the City of Portland and State of Oregon than to significant public safety and critical infrastructure resources from within the State of Washington. Coeur d'Alene, Idaho, is much closer to the City of Spokane, Washington, and Spokane County resources than to similar resources in the State of Idaho. There is some merit to acknowledging the need for formal cross-boundary coordination when considering future waiver requests.

**III. ANY NEW WAIVER GRANTS SHOULD, MINIMALLY, BE SUBJECT TO THE SAME CRITERIA SPECIFIED BY THE COMMISSION IN ITS WAIVER ORDER OF MAY 12, 2010**

The Commission also seeks comment on the timeframe for action on these additional waivers. The City of Seattle acknowledges that, should the Commission grant twenty-four additional waivers, the task of coordinating a nationwide, truly interoperable, public safety network will become significantly more difficult.

The issue of the number of Public Land Mobile Network (PLMN) ID numbers is especially troubling. Seattle suggests that the Public Safety Communications Research (PSCR) program of NIST working with NPSTC and the waiver recipients/early builders, and coordinating that work with ERIC, can determine the best numbering scheme for assigning PLMN-IDs. The number of PLMN-ID numbers must be limited, perhaps to a single Mobile Country Code (MCC) for all users of the public safety broadband wireless network in the United States, and another single mobile network code (MNC) for each State or very large urban area. Again, as discussed above, the need for most interoperability will occur within specific regions (e.g. the Puget Sound Region of Washington State) or within a single state. Proliferation of unique PLMN-IDs will make roaming and interoperability significantly more difficult.

Furthermore, Seattle believes any new waiver recipient should be, minimally, subject to the same set of criteria specified in the Commission's original *Waiver Order*, i.e. lease of spectrum from the PSST and payment of a leasing fee, use of LTE technology, preparing an interoperability showing or compliance with the interoperability rules developed by ERIC, coordination with regional partners and/or its State Government, roaming requirements, providing a minimal set of applications, and participation in the PSCR/DC Demonstration Network.

Some commenters on this Public Notice may suggest other criteria for limiting the number of additional waivers to be granted, e.g. the financial ability of the potential waiver recipient to actually construct a network. Seattle believes that basing a waiver decision on financial ability or ability of the potential recipient to muster other resources (e.g. staffing, radio sites, backhaul capability) will be hard for the Commission to evaluate. More significant criteria in determining waiver eligibility are demonstrated ability of a waiver recipient to coordinate its work with regional and/or State partners, and demonstrated need, e.g. vulnerability to natural and human-caused disasters such as the presence of an Urban Area Security Initiative (UASI) grant region.

#### **IV. THE BUDGET OF THE PUBLIC SAFETY SPECTRUM TRUST (PSST) SHOULD BE REVIEWED IN LIGHT OF ANY ADDITIONAL WAIVERS GRANTED.**

The Public Safety and Homeland Security Bureau reviewed and approved the budget of the PSST. Seattle suggests that any new waiver recipient be subject to the same fees as the original set of waiver recipients, i.e. an initial lease payment of \$15,000 and a second year lease payment of \$5,000. Because the ongoing oversight provided by the PSST may or may not require significantly more cost with more waiver recipients, it is appropriate for the Bureau, the PSST and the waiver recipients to review and potentially revise that budget.

## V. CONCLUSION

The City of Seattle strongly encourages the Commission to review and revise its position on Section 337 eligibility for use of this 700 MHz spectrum as explained above. Seattle urges the Commission to grant waivers only to State or local government entities whose sole or principal purpose is to protect the safety of life, health, or property. However Seattle believes, along with the State of New Mexico and others, that Section 337 (f)(1) allows such waiver recipients to enter into agreements with other entities (public service providers, utilities, critical infrastructure providers) whose communications sometimes have a primary purpose to protect the safety of life, health or property. We believe such use is consistent with the intent of Congress in writing Section 337 of the Communications Act, and are vital to the mission of the City of Seattle to serve and protect the people of Seattle.

Respectfully submitted,



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